

Appl. No. 10/050,476
Amdt. AF dated June 16, 2006
Reply to Final Office Action of April 18, 2006

REMARKS

Applicants have carefully reviewed the Final Office Action mailed April 18, 2006 in which claims 1-8, 10-12, 16, 17, and 21-23 were rejected. Claims 18-19 have been withdrawn from consideration and claims 9, 13-15, 20 and 24-32 were previously cancelled. As a courtesy, this Response is being presented to the Examiner as a draft of the arguments that may be presented by Applicant on appeal if the current rejections are maintained.

Rejections under 35 U.S.C. § 103

Claims 1-8, 10-12, 16, 17 and 21-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Peters et al., U.S. Patent No. 5,549,552 (hereinafter "Peters") in view of Ichinose et al., U.S. Patent No. 5,681,402 (hereinafter "Ichinose"). Applicants respectfully traverse this rejection. In order to render a claim obvious, there must be some motivation to combine the references, and the motivation or suggestion must be found in the cited prior art. See M.P.E.P. §2143.01. A reasonable expectation of success is also required in order for a combination of references to render a claim obvious. See M.P.E.P. §2143.02. In addition, references cannot be combined to render a claim obvious if any of the references is from a non-analogous art area. See M.P.E.P. §2141.01(a).

Claim 1 recites, in part, a metallic tubular member with a polymeric tubular member disposed over at least a portion of the metallic tubular member, forming a lap joint. A coupling agent comprising a functionalized titanate is disposed between the metallic tubular member and the polymeric tubular member within the lap joint. Further, claim 16 recites, among other elements, a coupling agent disposed between the metallic tubular member and a polymeric tubular member in a lap joint, the coupling agent being a functionalized titanate.

Peters discloses a balloon dilation catheter with improved pushability, trackability and crossability. The catheter shaft can have an outer tube and an inner tube. For example, Figure 2 appears to show an outer tube 35 disposed about an inner tube. The inner tube can comprise a proximal inner tube 33 and a distal inner tube 34. The proximal and distal inner tubes can be attached by various methods (see Column 7, lines 14-16). In attaching the distal and proximal inner tubes, a suitable medical grade adhesive such as cyanoacrylate or urethane may be used to secure the lap joint (see column 7, lines 21-23). Peters states that a lap joint length of about 3 to

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5 mm with cyanoacrylate or urethane provides sufficient bond strength (see column 7, lines 46-49).

Ichinose discloses a structure for a photovoltaic element. In several embodiments, the collecting electrodes of the photovoltaic element are wires with one or more layers disposed on the wires. For example, as shown in Figure 1A, a wire 101 can have a coating layer 102. "The coating layer 102 is formed from heat curing conductive adhesive or thermoplastic conductive adhesive, and its function is to mechanically and electrically connect the main part of the collecting electrode to the photovoltaic element substrate." (Column 10, lines 21-25) Further, the conductive adhesive is made by adding conductive particles and a coupling agent, for example a functionalized titanate, to a polymer. (Column 11, line 62 through column 14, line 37.)

Applicants assert that one of ordinary skill in the art would not be motivated to combine these two references. Neither reference contains a suggestion or motivation to combine the references. The lack of motivation can be shown in multiple ways, some of which are outlined below.

Peters already contains an adhesive (such as cyanoacrylate or urethane) that, in the form of a lap joint, "provides sufficient bond strength". (Column 7, line 47.) Because Peters states that there is sufficient bond strength with the disclosed adhesives, no motivation exists to add a second material such as a functionalized titanate. In addition, there is no suggestion or motivation to replace the adhesives disclosed in Peters with a functionalized titanate disclosed in Ichinose. Neither reference suggests that a functionalized titanate of Ichinose would form a better bond than the adhesives disclosed in Peters, and thus one of ordinary skill in the art would not be motivated to replace the adhesives disclosed in Peters with the functionalized titanate of Ichinose. For the above reasons, no motivation exists to modify Peters with Ichinose as proposed.

Further, Ichinose does not actually disclose a functionalized titanate being used on its own as an adhesive. Ichinose discloses a conductive adhesive that comprises conductive particles, a polymer and a coupling agent, and the coupling agent can be a functionalized titanate. The coupling agent is mixed in with the polymer and the conductive particles. It is well established that references must be considered "as a whole," meaning that an isolated element of the disclosure cannot be taken out of context from the reference. See, for example, M.P.E.P.

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§2141, part II. In this case, nowhere in the Ichinose reference is a functionalized titanate disclosed as a coupling agent on its own as an adhesive between two structures. The functionalized titanate is disclosed only as part of a conductive adhesive. Because Ichinose does not disclose a functionalized titanate being used on its own as a coupling agent, it cannot be said that Ichinose contains a suggestion or motivation to incorporate a functionalized titanate into the structure of Peters.

Instead, Peters actually discloses a conductive adhesive that comprises a functionalized titanate. Neither Peters nor Ichinose contain a suggestion or motivation for placing a conductive adhesive anywhere in a medical device, much less between a metallic tubular member and a polymeric tubular member in a medical device, as required by claims 1 and 16. Peters does not mention a need to conduct electricity through any portion of a medical device. Further, Ichinose does not mention anything about the desirability of using a conductive adhesive in the construction of medical devices, or anything other than a photovoltaic cell. Because Ichinose discloses only a conductive adhesive, neither of these references has a motivation or suggestion to combine the subject matter of these patents.

Thus, although Applicants are unsure whether the Examiner is modifying Peters with the functionalized titanate alone or the conductive adhesive of Ichinose, Applicants respectfully assert that the proposed combination of Peters and Ichinose cannot be used to render claims 1 and 16 obvious.

In fact, the only source that teaches or suggests that a functionalized titanate may lead to a particularly desirable bond is the current application. (See, for example, the Abstract and the first paragraph of the Summary of Invention section.) Thus, it appears as though one of two sources of motivation is being drawn upon in order to combine these references: 1) a suggestion or motivation that is found only in the current application and/or 2) that one of ordinary skill in the art would be motivated to try the functionalized titanate of Ichinose in Peters. Neither source of motivation is proper.

First, as mentioned above, the only source of motivation for adding the functionalized titanate to the structure of Peters appears to be the current application, which speaks about improving the joints between dissimilar materials within a medical device. See the first paragraph of the Summary of Invention section. Neither of the cited references teach that the functionalized titanate is better than, or should replace, the adhesives disclosed in Peters (e.g.,

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cyanoacrylate or urethane). Only the current application appears to provide such motivation, and using the current application as a source of motivation for combining references would be using impermissible hindsight. See M.P.E.P. §2145, part X.

Further, it also appears as though the "obvious to try" standard may have been used in formulating the obviousness rejection. Because neither of the references being combined provides a suggestion or motivation to replace the adhesives disclosed in Peters with the functionalized titanate of Ichinose, it appears as though the Examiner may be asserting that it would have been obvious for the Applicants to try the functionalized titanate of Ichinose in the structure of Peters. Apparently the Examiner is asserting that, if the Applicants would have tried the functionalized titanate, they would have found out that the functionalized titanate results in a coupling agent that is "particularly suitable for bonding polymeric materials to metallic components of frameworks of medical devices." (See paragraph two of the Summary of Invention section.) However, the "obvious to try" standard is not a proper standard for finding obviousness. See M.P.E.P. §2145, part X. Because it appears as though one or more improper sources of motivation are being used to combine these references, these references cannot be used to render the claims of this application obvious.

For all of the above reasons, Applicants assert that there is no motivation to combine Peters and Ichinose, and the current claims are allowable over these references.

Further, M.P.E.P. §2143.02 requires a reasonable chance of success in order for a combination of references to render a claim obvious. Ichinose only speaks to a conductive adhesive that internally comprises a functionalized titanate. The functionalized titanate is mixed internally with the polymer and the conductive particles. There is nothing in Ichinose to suggest that the functionalized titanate would be effective if it were disposed between a polymeric structure and a metal structure, as required by claims 1 and 16. Rather, the functionalized titanate is disclosed as being mixed with the polymer of the conductive adhesive and providing an internal adhesion between the polymer and an inorganic object with which the polymer is coming into contact. Because Ichinose does not mention that the functionalized titanate can be used in the manner recited in claims 1 and 16, there is no reasonable expectation of success that Peters can be modified by Ichinose and result in the invention of claims 1 and 16. Thus, Applicants assert that it is not proper to combine Peters with Ichinose as proposed.

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Applicants also maintain the assertion that Ichinose and the current invention are in non-analogous art areas. According to M.P.E.P. §2141.01(a), references from non-analogous art areas cannot be used to render a claim obvious. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." Here, Ichinose is undoubtedly outside the field of Applicants' endeavor. The field of producing photovoltaics is not even remotely related to the field of medical devices. Further, Ichinose discusses the use of a conductive adhesive within the field of photovoltaics, where a good electrical connection is required. This has nothing to do with the production of the medical devices as described in the current application.

When compared to the current invention, the disclosure of Ichinose is completely different in structure, materials and purpose. In Ichinose, a collecting electrode, for example a conductive wire, is attached to a photovoltaic substrate, such as a semiconductor material. An electrical connection is desired between these two elements, so a conductive adhesive is used. The problem addressed in the current application (attaching two elongate elements to one another in a medical device) is not even closely related to using a conductive adhesive in the field of photovoltaics, where a good electrical connection is required. Applicants do not see how the technology of Ichinose, which is specifically described as being suitable for the field of photovoltaics, is even remotely pertinent to the issues in the current Application. Because Ichinose is not analogous art, it cannot be used to reject the claims of the current application.

The Examiner apparently rebutted the Applicants' arguments from the previous Response by arguing that column 13, lines 36-40 describes the coupling of organic and inorganic structures, asserting that this portion of the disclosure both provides motivation and makes Ichinose analogous art. Applicants respectfully disagree with this assertion, and again point out that references must be taken as a whole, and isolated portions of a reference cannot be taken out of context for use in an obviousness rejection. See, for example, M.P.E.P. §2141, part II. Thus, because the passage cited in the Office Action actually discloses a conductive adhesive that comprises a functionalized titanate and not a functionalized titanate being used on its own as an adhesive, this passage actually reinforces our contention that there is no motivation to combine these references and that Ichinose is non-analogous art.

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Simply put, the cited portion of Ichinose does not actually disclose a functionalized titanate being used on its own as an adhesive to attach two structures. Rather, it discloses a conductive adhesive that internally comprises a functionalized titanate. As mentioned above, because Ichinose does not disclose a functionalized titanate being used on its own as an adhesive, Ichinose cannot provide the motivation for one of ordinary skill in the art to incorporate the functionalized titanate into Peters as proposed. Also, Ichinose actually discloses a conductive adhesive, and neither Peters nor Ichinose discusses a motivation to incorporate a conductive adhesive into the structure of Peters (neither reference speaks to conductivity in a medical device).

Column 13, lines 36-40 was cited as also showing that Ichinose is analogous to the current application. However, this portion of Ichinose actually shows the opposite; Ichinose is non-analogous art. As mentioned above, a reference must be considered as a whole, and isolated elements of the reference cannot be taken out of context and used in an obviousness rejection. See M.P.E.P. §2141, part II. It is asserted in the Office Action that Ichinose discloses a functionalized titanate coupling an organic material to an inorganic material. However, this is taken out of context of the entire Ichinose specification. Ichinose actually discloses that the functionalized titanate is used internally in a conductive adhesive. The conductive adhesive also comprises a polymer and conductive particles. The portion of the Ichinose specification cited by the Examiner is actually describing the ability of the functionalized titanate to adhere to the polymer with which it is mixed and an inorganic object with which to polymer is contacting. This internal adhesion is markedly different than applying a functionalized titanate between two objects in order to adhere them to one another. In fact, as mentioned above, there is no disclosure that the functionalized titanate would even work on its own as an adhesive, outside of the polymer of the conductive adhesive. At best, Ichinose discloses a conductive adhesive that comprises a functionalized titanate, where the conductive adhesive is being used in a photovoltaic cell where an electrical connection is required. This type of application has nothing whatsoever to do with connecting two portions of a medical device, where no electrical connection is required.

For the foregoing reasons, Applicants respectfully submit that the combination of Peters and Ichinose cannot properly be used together to render claims 1-8, 10-12, 16, 17 and 21-23 obvious because there is no motivation or suggestion in the prior art to combine the references,

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because there is no reasonable chance of success in combining these references to yield the claims of the application, and because Ichinose is non-analogous art to the current application.

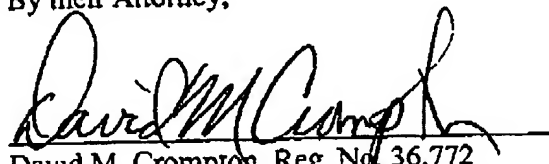
Reexamination and reconsideration are respectfully requested. It is respectfully submitted that all pending claims are now in condition for allowance. Issuance of a Notice of Allowance in due course is requested. If a telephone conference might be of assistance, please contact the undersigned attorney at (612) 677-9050.

Respectfully submitted,

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By their Attorney,

Date: 6/16/06


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